

REMARKS

Reconsideration of this application, in view of the foregoing amendment and the following remarks, is respectfully requested.

Claims 72-96 have been canceled above. Accordingly, claims 16, 56-71 and 97-111 are currently pending in this application.

The examiner's indications that claims 16 and 56-71 are allowed, and that claims 99-104 and 107-109 contain allowable subject matter, are noted with appreciation.

Claims 97, 98, 104-106, 110 and 111 stand rejected under 35 USC §103 as being unpatentable over Burleson et al. (US 5223665) in view of Yezersky et al. (US 6514001). These rejections are respectfully traversed.

In the seminal case *Graham v. John Deere*, the U.S. Supreme Court set forth the test to be used for evaluating the obviousness of an invention over the prior art. First, the scope and content of the prior art should be evaluated. Second, the differences between the invention and the prior art should be measured. Third, the level of skill of the person of ordinary skill in the art should be determined.

Against this background, the obviousness of the invention over the prior art is to be evaluated. Secondary considerations, such as commercial success, failed attempts by others to solve the same problem, etc. may also be important factors in the evaluation.

In the present case, the Burleson reference describes a perforating gun firing head having a safety device for preventing explosives detonation until the firing head is safely downhole and away from personnel at the surface. Important features of the safety device stressed by Burleson are that: 1) the safety device automatically "resets"

when the safety device is retrieved from a wellbore (see col. 3, lines 33-43 and col. 8, lines 25-38), and 2) the safety device must be at a sufficient depth downhole in order for the explosives detonation to be permitted by the device (see col. 8, lines 8-15).

The Yezerksy reference describes how a magnetorheological (MR) fluid may be used to provide variable length shafts in automobiles. The applications for such variable length shafts include a steering column, seat adjustments, supports, adjustable pedals, etc. It should be noted that there is no teaching or suggestion provided by Yezerksy as to how such variable length shafts could be used to provide a safety device for preventing undesired detonation of explosives at a wellsite, or how such variable length shafts could be constructed for use in the hostile environment of a high temperature wellbore.

Independent claim 97 recites a firing head for use in a well, with the firing head including a magnetic assembly, a magnetorheological fluid and a firing piston. The firing piston is prevented from displacing when the magnetic assembly applies a magnetic field having a strength level to the magnetorheological fluid. Note that this is completely different from the teachings of the Burleson reference, which relies on temperature (both increasing and decreasing) to operate a perforating safety device. Claim 97 is also completely different from the Yezerksy reference, which teaches use of MR fluids to adjust a shaft length in an automobile.

A person of ordinary skill in this art would generally have a bachelor's degree in mechanical engineering, and would have several years of experience in designing perforating systems. Such a person would recognize the benefits of the Burleson safety device (resetting upon retrieval and permitting detonation only when the device is at depth downhole), and would not be motivated to compromise those benefits by replacing the eutectic material of Burleson with the MR fluid and magnetic devices of Yezerksy. Clearly, if the MR fluid and magnetic devices of Yezerksy were substituted for the eutectic material of Burleson, the safety device would be operable to permit detonation at the surface, and would not automatically reset upon retrieval to the surface.

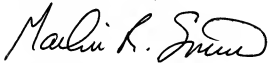
Thus, it would not be obvious to a person of ordinary skill in the art to make the combination of the Burleson and Yezersky references proposed in the Office Action. To do so would render the Burleson safety device less suited for its intended purpose. For at least this reason, the examiner is respectfully requested to withdraw the rejections of claim 97 and its dependents.

In view of the foregoing amendment and remarks, all of the claims pending in this application are now seen to be in a condition for allowance. A Notice of Allowance of claims 16, 56-71 and 97-111 is therefore earnestly solicited.

The examiner is hereby requested to telephone the undersigned attorney of record at (972) 516-0030 if such would expedite the prosecution of the application.

Respectfully submitted,

SMITH IP SERVICES, P.C.



Marlin R. Smith
Attorney for Applicant
Registration No. 38,310

Dated: May 21, 2007

P.O. Box 997
Rockwall, Texas 75087
(972) 516-0030 (phone)
(972) 516-0608 (fax)

I hereby certify that this correspondence is being
filed in the U.S. Patent and Trademark Office
electronically via EFS-Web, on May 21, 2007.

